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NASA's Aviation System Technology Advanced Research (AvSTAR)

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Airspace Systems Program

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Commission on the Future of the US Aerospace Industry

Interim Report #2

March 20, 2002

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Air Transportation Finding #4:

"All present and future air transportation concepts place a heavy reliance on a robust, secure and flexible communication, navigation and surveillance capability."

Recommendation 7.b.

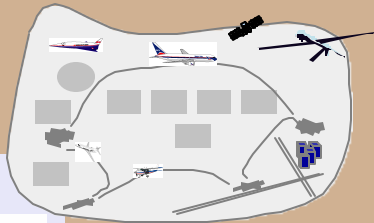
"The Administration and Congress should fully fund air traffic control modernization efforts in fiscal year 2003 and beyond, and prioritize FAA and NASA research and development efforts that are the critical building blocks for the future."

"R&D investments should include a focus on security, high bandwidth communications, precision navigation & surveillance, ground & airborne control automation, advanced weather sensing, small aircraft transportation technologies, and noise & emissions reduction."

AvSTAR Strategic Approach

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VAMS



Ops Cons

Validation



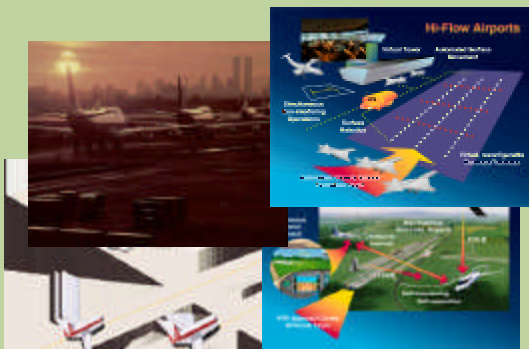
AvSTAR FY04

CNS



Enable operational improvements through new CNS capabilities

Airports



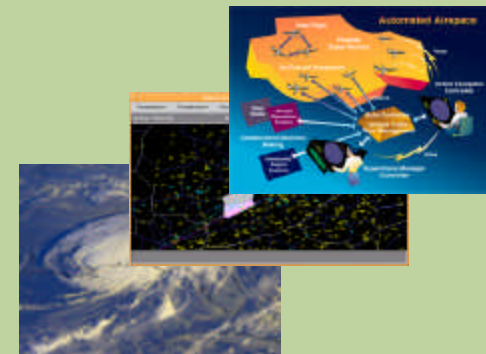
Eliminate congestion & improve utilization for surface/runways

Airspace



Reduce separations/restrictions & optimize system ops

Traffic Flow



Improve traffic flow, in adverse weather

CNS Component Technologies

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Goal: Enable operational improvements through new Communication, Navigation and Surveillance capabilities

AATT Project & IT Base

Satellite Communications



- SATCOM terminals
- Phased array antennas
- On-board data sharing

SATS Program

Airborne Internet



- SATS comm architectures
- Network technologies

AvSTAR Component Technologies

CNS Secure System Technologies



- Requirements and architecture for space-based C&S
- Satellite/aircraft C&S technologies
- Robust ATM datalink, secure networks and frequency compatible technologies

CNS Secure Information Infrastructure Technologies



- Define next-generation CNS information and performance requirements
- Define/evaluate CNS architectures and supporting technologies